SLR Document Changes: Closed Treated Water Systems

Overview of purpose of change: Revise AMP XI.M21A, "Closed Treated Water Systems," to include the latest revision of EPRI closed cooling water chemistry guideline.

Basis Document Input: Revise NUREG-2221 as follows.

Add a new row to Table 2-29 as follows:

XI.M21A Closed Treated Water Systems		
Location of Change	**Summary of Significant Changes**	**Technical Bases for Changes**
Parameters Monitored or Inspected References	Update industry chemistry guideline to later version in EPRI 3002000590, "Closed Cooling Water Chemistry Guideline," Revision 2.	EPRI issued 3002000590, "Closed Cooling Water Chemistry Guideline," Revision 2 in 2013 from the previous version (1007820). According to EPRI, a committee of industry experts collaborated in reviewing data and generating water-chemistry guidelines, which should be used at all nuclear plants, that has been endorsed by the utility chemistry community. Approved precedents for use of the more recent version of the above guideline are documented in the NRC's SERs for Turkey Point and Peach Bottom (ML19191A057, and ML19280D820, respectively).

Revise Section 4, "References" as follows:

EPRI. EPRI ~~1007820~~3002000590, "Closed Cooling Water Chemistry Guideline," Revision 2." Palo Alto, California: Electric Power Research Institute. ~~April 2004~~December 2013.

GALL-SLR: Revise NUREG-2191 as follows.

XI.M21A CLOSED TREATED WATER SYSTEMS

3. Parameters Monitored or Inspected: This program monitors water chemistry parameters (preventive monitoring) and the condition of surfaces exposed to the water (condition monitoring). Depending on the water treatment program selected for use in association with this AMP and/or plant OE, this program may also include corrosion monitoring (e.g., corrosion coupon testing) and microbiological testing.

Water chemistry parameters (such as the concentration of iron, copper, silica, oxygen, and hardness, alkalinity, specific conductivity, and pH) are monitored because maintenance of optimal water chemistry prevents loss of material and cracking due to corrosion and SCC. The specific water chemistry parameters monitored and the

acceptable range of values for these parameters are in accordance with the Electric Power Research Institute (EPRI) ~~1007820~~3002000590, "Closed Cooling Water Chemistry Guideline," which is used in its entirety for the water chemistry control or guidance.

The visual appearance of surfaces is evaluated for evidence of loss of material. The results of surface or volumetric examinations are evaluated for surface discontinuities indicative of cracking. The heat transfer capability of heat exchanger surfaces is evaluated by either visual inspections to determine surface cleanliness, or functional testing to verify that design heat removal rates are maintained.

References

EPRI. EPRI ~~1007820~~3002000590, "Closed Cooling Water Chemistry Guideline, Revision 2." Palo Alto, California: Electric Power Research Institute. ~~April 2004~~December 2013.

Table XI-01. FSAR Supplement Summaries for GALL-SLR Report Chapter XI Aging Management Programs

AMP	GALL-SLR Program	Description of Program	Implementation Schedule
XI.21A	Closed Treated Water Systems	This is a mitigation program that also includes a condition monitoring program to verify the effectiveness of the mitigation activities. The program consists of: (a) water treatment, including the use of corrosion inhibitors, to modify the chemical composition of the water such that the effects of corrosion are minimized; (b) chemical testing of the water so that the water treatment program maintains the water chemistry within acceptable guidelines; and (c) inspections to determine the presence or extent of degradation. The program uses as applicable, EPRI ~~1007820~~3002000590, Closed Cooling Water Chemistry Guideline, and includes corrosion coupon testing and microbiological testing.	Program and SLR enhancements, when applicable, are implemented 6 months prior to the subsequent period of extended operation.